

(No Model.)

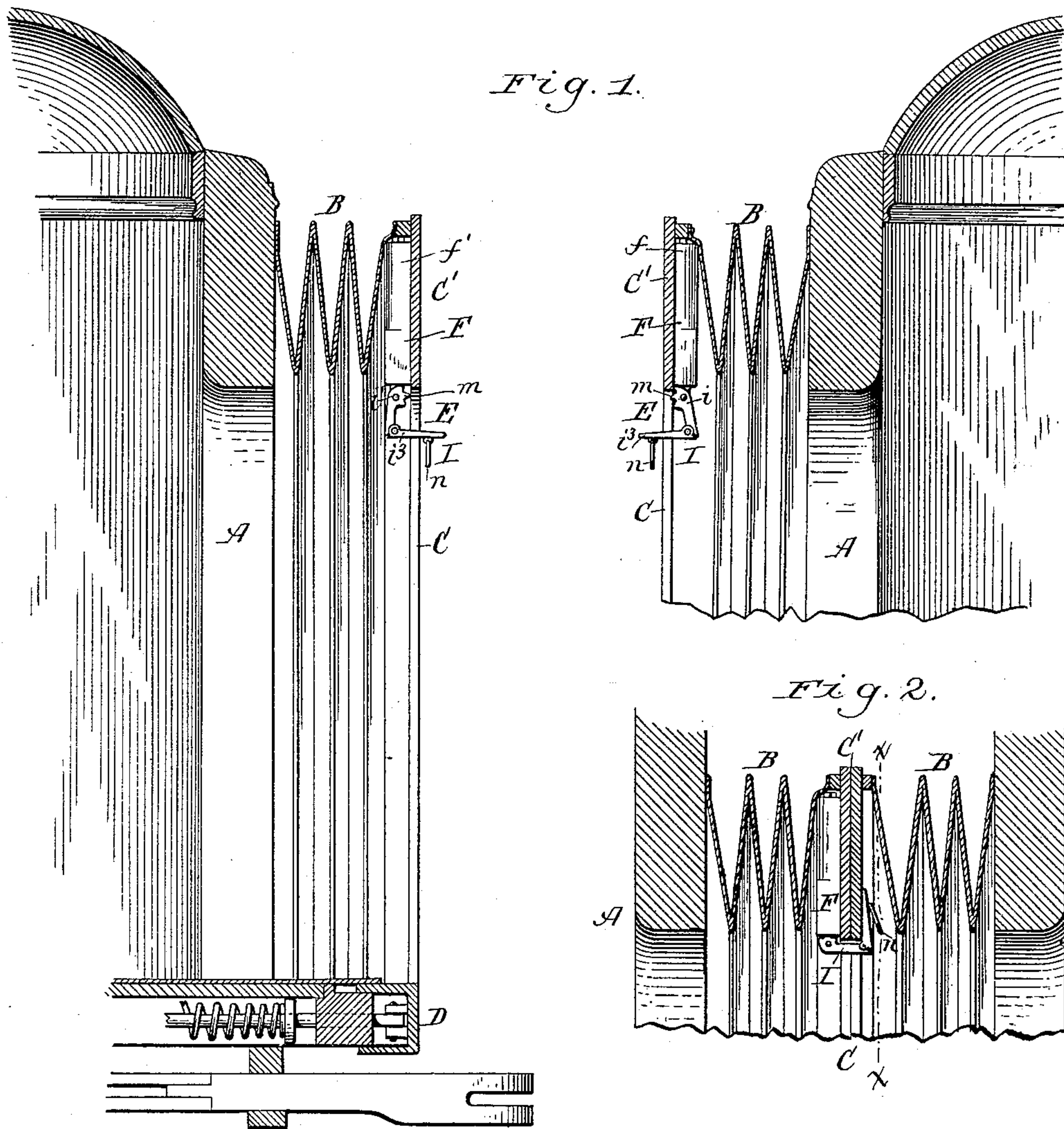
2 Sheets—Sheet 1.

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RAILWAY CAR.

No. 389,359.

Patented Sept. 11, 1888.



Witnesses:

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UNITED STATES PATENT OFFICE.

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RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 389,359, dated September 11, 1888.

Application filed June 15, 1888. Serial No. 277,217. (No model.)

To all whom it may concern:

Be it known that we, THOMAS A. BISSELL and CLAES BERGMAN, both of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Railway-Cars, of which the following is a specification.

This invention relates to that class of vestibule-cars in which the vestibule consists of an extensible hood having at its outer end a vertical frame or face-plate, which abuts against the face-plate of the hood of the adjoining car, and forms a closed passage between the cars. Heretofore the upper portions of these extensible hoods have been expanded by means of springs, so as to retain the opposing face-plate in frictional contact at all times.

The object of our invention is to provide simple and inexpensive means for holding together the upper portions of the face-plates without the employment of distending-springs, while at the same time giving the plates the necessary vertical and lateral play to enable the same to adapt themselves to the position of the car in the rocking and swaying movements thereof.

The invention consists to that end of a coupling for connecting the upper portions of the adjoining hoods, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a sectional elevation of the adjacent ends of two vestibule-cars, showing the face-plates of the hoods uncoupled. Fig. 2 is a similar view showing the face-plates coupled together. Fig. 3 is a cross-section in line $x x$, Fig. 2. Fig. 4 is a longitudinal section of the coupling, partly in elevation, on an enlarged scale. Fig. 5 is a vertical longitudinal section of the coupling in line $y y$, Fig. 4. Fig. 6 is a bottom plan view of the coupling. Fig. 7 is a cross-section in line $z z$, Fig. 5. Fig. 8 is a fragmentary sectional elevation of a slightly-modified construction of the coupling.

Like letters of reference refer to like parts in the several figures.

A represents the end walls of the vestibule or car. B are the extensible hoods secured at their inner ends to said end walls, and C are the vertical rectangular frames or face-plates secured to the outer ends of the hoods. The

lower ends of these face-plates are attached to the movable platform or spring-buffer D of the car in the usual manner.

E represents the couplings whereby the upper portions of the adjoining face-plates of the hoods are connected together, and which are constructed as follows:

F represents a rectangular plate or frame secured to the inner side of the upper cross-piece, C', of the face-plate C, and which is provided at both its longitudinal edges with vertical tubular enlargements $f f'$, which are preferably U-shaped in cross-section and rest with their open sides against the face-plates.

G G' represent two vertically-movable rods or bolts arranged within the hollow enlargements $f f'$ and projecting through the lower ends thereof.

$h h'$ are spiral springs surrounding the upper portion of the rods or bolts G G', and bearing with their upper ends against collars or washers h^2 , secured to the upper ends of the bolts, and with their lower ends against lugs h^3 , formed within the hollow enlargements $f f'$, the bolts G G' passing through said lugs and being guided therein. The springs $h h'$ hold the bolts G G' in an elevated position and resist their downward movement.

I represents a coupling-hook pivoted to the lower ends of the bolts or rods G G', and adapted to engage behind the upper cross-piece of the face-plate of the opposing hood, as represented in Figs. 2 and 5. The hook I is provided with two bifurcated lugs or ears $i i'$, which are pivoted to the lower ends of the bolts G G' by a pin, i^2 .

J J' represent followers or movable blocks, arranged in the lower portions of the hollow enlargements $f f'$, and bearing with their lower ends against the inner portion of the hook I, as represented in Fig. 5, so as to retain the hook in a horizontal position. The followers or blocks J are pressed against the inner portion of the hook I by means of spiral springs k , surrounding the lower portion of the spring-bolts G G' and interposed between the upper end of the followers, and collars l , formed on or secured to the spring-bolts below the lugs h^3 , as represented in Figs. 4 and 5. The springs k force the followers J J' against the inner portion of the hook I, and thereby lock the hook in a horizontal position. The hook

I is preferably provided on its upper side, near its inner end, with one or more teeth or projections, *m*, which enter recesses *m'*, formed in the bottom of the followers *J J'*, so as to form a more secure lock between the parts. The sides of the teeth *m* are inclined, as shown, so as to facilitate their entrance into the recesses *m'* and their disengagement therefrom. The nose *i*³ of the hook *I* is preferably jointed to the body of the hook, as clearly shown in Fig. 5, so as to enable the nose to move inwardly and clear the adjacent folds of the opposing hood in swinging the hook into its locked position. The joint of the hook is so constructed that its nose is prevented from swinging outwardly beyond a position at right angles to the body of the hook. A ring or loop, *n*, is attached to the hook for manipulating the same.

When the face-plates of the hoods are uncoupled, the hook *I* depends from the lower end of the spring-bolts *G G'* and clears the opposing face-plate, and the movable followers *J J'* bear against the inner end of the hook, as shown by full lines in Fig. 1 and by dotted lines in Fig. 5.

The face-plates are coupled together by simply swinging the hook *I* upwardly into a horizontal position by means of the ring *n*. The teeth *m*, bearing against the followers *J J'*, move the same upwardly against the pressure of the springs *k* and enter the recesses *m'*, when the sections of the springs will force the followers downwardly against the inner portion of the hook and lock the same in this position. In pulling the hook downwardly to uncouple the face-plates the teeth *m* press the follower upwardly and out of the recesses *m'*, and thus allow the hook to be swung down. The lower portions of the spring-bolts *G G'* are square and pass through correspondingly-shaped openings formed in the followers *J J'*, so as to prevent the followers from turning upon the spring-bolts and changing the relative position of the teeth of the coupling-hook and the recesses in the lower ends of the followers. The coupling-hook *I*, being supported by the spring-rods *G G'*, is permitted to yield vertically and follow the rising and falling movements of the face-plates by the rocking of the car, and the face-plates are free to move laterally upon each other in the swaying movements of the car.

It will be seen that the springs *k* hold the follower in contact with the coupling-hook at all times, whether the spring-bolts *G G'* be elevated or depressed.

In the modified construction of the coupling represented in Fig. 8 the lower ends of the followers *J* are provided with offsets *o*, which bear against the extreme inner end of the coupling-hook *I* on the inner side of its pivot. This construction causes the inner portion of the coupling-hook to be further depressed and its outer end to be raised to a greater extent than in the first-described construction, thereby pressing the nose of the hook inwardly

against the rear side of the opposing face-plate, forcing the latter against the adjacent face-plate and holding the two plates in frictional contact.

A coupling, *E*, is attached to the face-plate of each hood, so that the hook of one face-plate will engage with the upper cross-piece of the opposing face-plate, the opposing couplings being preferably arranged in opposite sides of the center of the adjacent face-plates, as shown in Fig. 3.

It is obvious that a single supporting-bolt, *G*, may be employed, if desired, and a narrow coupling-hook be pivoted thereto; but we prefer to employ the bolts and a wide hook, as shown, as this forms a strong and more reliable construction.

We claim as our invention—

1. In a coupling for connecting the opposing hoods of vestibule-cars, the combination, with a supporting plate or frame secured to the face-plate of the hood, of vertically-movable spring-bolts arranged in said supporting-frame, a coupling-hook pivoted to said spring-bolt and adapted to engage with the plate of the opposite hood, and a yielding block or follower bearing against the inner portion of said coupling-hook, whereby the hook is locked in position, substantially as set forth.

2. In a coupling for connecting the opposing hoods of vestibule-cars, the combination, with a supporting plate or frame secured to the face-plate of the hood, of a vertically-movable spring-bolt arranged in said supporting-frame, a coupling-hook pivoted to the lower end of said spring-bolt, a movable block or follower bearing against the inner portion of the pivoted hook, and a spring whereby said follower is held against the hook, substantially as set forth.

3. In a coupling for connecting the opposing hoods of vestibule-cars, the combination, with a supporting plate or frame secured to the face-plate of the hood, of a vertically-movable spring-bolt arranged in said supporting-frame, a coupling-hook pivoted to the lower end of said spring-bolt and provided with a jointed nose, a movable block or follower bearing against the inner end of said coupling-hook, and a spring whereby the follower is pressed against the hook, substantially as set forth.

4. In a coupling for connecting the opposing hoods of vestibule-cars, the combination, with a supporting plate or frame secured to the face-plate of the hood, of a spring-bolt arranged in said frame, a coupling-hook pivoted to the lower end of said spring-bolt and provided with a locking projection, and a spring-actuated follower bearing against the inner portion of the coupling-hook and provided with a recess in which said locking projection engages, substantially as set forth.

5. In a coupling for connecting the opposing hoods of vestibule-cars, the combination, with a supporting-plate secured to the face-plate of the hood, of a vertically-movable

spring-bolt arranged in said frame, a coupling-hook pivoted to said spring-bolt, and a spring-actuated follower provided at its lower end with an offset bearing against the inner end of
5 said coupling-hook, substantially as set forth.

6. In a coupling for connecting the opposing hoods of vestibule-cars, the combination, with a supporting-plate attached to the face-plate of the hood and provided with tubular
10 enlargements $f f'$, having lugs h^3 , of vertically-movable rods $G G'$, arranged in said enlargements and provided with collars l and h^2 , springs $h h'$, interposed between the collars h^2 and the lugs h^3 , a coupling-hook, I , pivoted to

the lower ends of said spring-rods, followers $J J'$, arranged in said enlargements and bearing against the inner portions of the coupling-hook, and springs k , interposed between the followers $J J'$ and the collars l , substantially
as set forth. 15 20

Witness our hands this 8th day of June, 1888.

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Witnesses:

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